

September 26, 2014



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

East Building, PHH – 32
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

DOT-SP 10066
(FOURTEENTH REVISION)

EXPIRATION DATE: August 31, 2018

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Carleton Technologies Inc.
Orchard Park, NY
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification cylinders conforming with all regulations applicable to a DOT Specification 39 cylinder, except as specified herein, for the transportation in commerce of the materials authorized by this special permit. The non-DOT specification cylinder may be transported by itself or incorporated into a self inflating life raft assembly. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.219(b)(1) and 173.304a in that a non-DOT specification cylinder is not authorized except as specified herein.

September 26, 2014

5. BASIS: This special permit is based on the application of Carleton Technologies Inc., dated September 9, 2014, submitted in accordance with § 107.109 and additional information dated September 19, 2014.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Compressed gas, n.o.s. (Carbon dioxide with a helium gas mixture)	2.2	UN1956	N/A
Life-saving appliances, self inflating	9	UN2990	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a welded, stainless steel, non-DOT specification cylinder having a 20.4 to 22.0 cubic inch water capacity, conforming with Carleton Technologies Inc. (CTI) drawing 1612-046 Rev. F (P/N's 028-780210-2 and 028-820057-2), CTI drawing 1812-161 Rev. D (P/N 1812-161-01) and CTI drawings 1829-030-01, 1829-030-02, 1829-030-03 on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) and with DOT Specification 39 (§§ 178.35 and 178.65), except as follows:

§ 178.65(a) *Type, size, service pressure and test pressure.*

The cylinder is a seamless shell with two end fittings butt welded by the plasma arc method. Maximum water capacity may not exceed 22 cubic inches. Marked service pressure is 2,100 psig. Proof test pressure after auto-frettage is 4,000 psig.

§ 178.65(b) *Material.*

The cylinder must be made from type 304L stainless steel tubing conforming with ASTM A 269 and Federal Specification QQ-S-766D.

September 26, 2014

§ 178.65(c) *Manufacture.*

(1) Two end fittings must be butt welded to the cylinder shell by the plasma arc method.

(2) The thickness at the point of closure must be at least equal to the thickness of the cylindrical shell.

(3) Each cylinder must be subjected to a process treatment after welding by pressurizing to approximately 375 percent of marked service pressure in a fixture which allows the cylinder to expand to 2 inches by maintaining pressure for at least 60 seconds. Process treatment must be witnessed by the inspector.

(4) Welding or brazing, except for welding end fittings, is prohibited. End fittings may be attached by butt-welding only using the plasma arc method.

§ 178.65(d) *Wall thickness.*

Wall thickness must be measured after auto-fretage. Minimum thickness is 0.042 inches.

§ 178.65(e) *Openings and attachments.*

(1) through (4) * * *

ADD: (5) Each opening must be equipped with safety relief devices conforming with the device described in the application.

§ 178.65(f) *Pressure tests.*

(1) * * *

(2) If less than 200 cylinders are produced each day, one cylinder from each day's production must be pressurized to destruction until a pattern of uniform properties for manufacturing process is established. From then on, one cylinder taken from each lot must be pressurized to destruction. The entire lot must be rejected if:

September 26, 2014

(i) A failure occurs at a pressure less than 2.5 times the marked service pressure.

(ii) The failure initiates in a weld or weld heat-affected zone.

(iii) Failure is other than in the sidewall of the cylinder longitudinal with its long axis.

(3) A Lot@ is defined as a group of 200 cylinders successively produced per production shift (not exceeding 10 hours) having identical size, design, construction, material, heat treatment, finish and quality.

§ 178.65(i) *Marking.*

(1) * * *

(2) * * *

(i) Each cylinder must be marked "DOT-SP 10066" instead of "DOT 39".

(ii) through (viii) * * *

§ 178.65(j) *Intergranular corrosion test.*

Cylinders representing the starting material and production lots must be subjected to "test for resistance to intergranular corrosion" as prescribed in paragraph 4.5.2 of Federal Specification QQ-S-766D. Results of the test must show the material to be free from precipitated chrome carbides. Testing must be performed as follows:

(1) The first three cylinders produced from each heat, coil, sheet, plate or other unit of starting material; and

(2) One cylinder from each lot of 200 cylinders. The test cylinder must be sectioned through the weld and the weld-affected zone and tested for carbide precipitation. If test results of the first ten lots of each unit of starting material

September 26, 2014

prove to be free from carbide precipitation, the sample size may be increased to one cylinder from each 500 produced.

8. SPECIAL PROVISIONS:

a. The cylinders are limited to military life support systems only.

b. For a cylinder designed to be refilled, each design must be qualified by subjecting a representative cylinder to a pressure reversal (cycle) test from approximately zero to service pressure at a rate not to exceed six cycles per minute. The tested cylinder must withstand at least 1,000 cycles without distortion. Carleton Technologies Inc. may refill the cylinder a maximum of three times. Topping off is considered a refilling. The serial number of each cylinder that has been refilled must be reported to the OHMSPA at the time of the next renewal application.

c. Cylinders shipped separately (i.e., not as a life saving appliance) must be individually bubble wrapped and placed in double walled fiberboard box marked as a UN4G/Y/27.7/S. A maximum of 25 cylinders per box is authorized.

d. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

e. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered for transportation in conformance with this special permit and the HMR.

f. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

September 26, 2014

g. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

h. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, cargo vessel, and cargo aircraft only.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel and aircraft used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit to the air carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
 - o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each AHazmat employee@, as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

September 26, 2014

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: SStaniszewski/dl